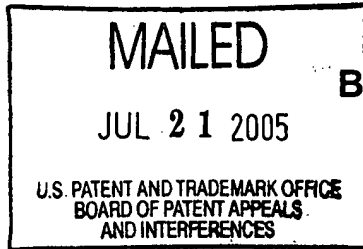


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

## UNITED STATES PATENT AND TRADEMARK OFFICE



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### BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex parte EDWARD S. MISZCZAK and MILENA KRILIC-ANDAN

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Appeal No. 2005-1378  
Application No. 09/227,242

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ON BRIEF

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Before PAK, OWENS, and WALTZ, Administrative Patent Judges.  
PAK, Administrative Patent Judge.

### DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 3, 5, 8 and 11.<sup>1</sup> Claims 4, 6, 7, 9, 10 and 12 through 20 were objected to as being dependent on a rejected base claim, but indicated to be allowable "if rewritten in independent form, including all of the limitations of the base claim and any

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<sup>1</sup> The examiner has withdrawn the Section 112 rejection of claims 9, 10, 12, 13, 16, 23, 24, 26 and 27 set forth in the Office action dated April 8, 2003. See the Answer, page 3. Thus, these claims are no longer subject of this appeal.

intervening claims.” See the Answer, page 3. Claims 21 through 27 were indicated to be allowable by the examiner. See the Answer, page 2.

The subject matter on appeal is directed to metal-core weld wires having reduced fume generation during gas shielded welding operations. See, e.g., the specification, page 1. Further details of the appealed subject matter are recited in representative claim 1 reproduced below:

1. A metal-core weld wire for gas shielded welding, comprising:  
a low carbon steel sheath having a carbon content of less than 0.005% C;  
a metal core composition between approximately 16% and approximately 20 % of a total weight of the metal-core weld wire,  
whereby the metal-core weld wire has a relatively reduced fume generation rate.

Claims 1, 3, 5, 8 and 11 stand rejected under 35 U.S.C. § 103 as unpatentable over the disclosure of U.S. Patent 5,824,992 issued to Nagarajan et al. on October 20, 1998 (hereinafter referred to as “Nagarajan”).

We have reviewed the claims, specification and applied prior art reference, including all of the arguments and evidence advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner’s Section 103 rejection is well founded. Accordingly, we affirm the examiner’s Section 103 rejection essentially for those factual findings and conclusions set forth in the Answer. We add the following primarily for emphasis and completeness.

Under 35 U.S.C. 103, to establish a *prima facie* case of obviousness, there must be some objective teachings or suggestions in the prior art reference and/or knowledge generally available to a person having ordinary skill in the art that would have led such person to arrive at the claimed subject matter. See generally *In re Oetiker*, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992)(*Nies J., concurring*); *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). The knowledge generally available to a person having ordinary skill in the art includes the appellants' admission regarding what was known at the time of the invention. *In re Nomiya*, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975)(the admitted prior art in applicants' specification may be used in determining the patentability of a claimed invention); *in accord In re Davis*, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962).

With the above precedents in mind, we turn to the examiner's rejection of claims 1, 3, 5, 8 and 11 under 35 U.S.C. § 103 as unpatentable over the disclosure of Nagarajan. We note that the appellants do not dispute the examiner's finding that Nagarajan discloses or suggests a metal core weld wire comprising a metal-core composition between approximately 13 to 45% of the total wire weight and a steel sheath having a carbon content of 0.005 to 0.15% carbon. See the Brief and Reply Brief in their entirety. Rather, the appellants argue that the carbon content in the steel sheath taught by Nagarajan would not have suggested to one of ordinary skill in the art to employ a steel sheath

having a carbon content of less than 0.005% as required by claims 1, 8 and 11. *Id.* We do not agree.

As found by the examiner (Answer, page 5), Nagarajan teaches a steel sheath having a carbon content as low as 0.005% which is very close to the carbon contents recited in claims 1, 8 and 11. Due to the closeness of the percentages of the carbon employed in the claimed and Nagarajan's steel sheaths, one of ordinary skill in the art would have reasonably expected them to provide the same or similar properties. See *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003)("[A] *prima face* case of obviousness exists when the claimed range and the prior art range do not overlap, but are close enough such that one skilled in the art would have expected them to have the same properties.") (citing *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985)).

Moreover, we note that a steel sheath having a very low carbon content was known to be desirable for reducing fume generation in a weld wire, i.e., a flux-core weld wire, and a metal-core weld wire (which also uses a steel sheath like the flux-core weld wire) was known to have a fume generation problem. See the appellants' admission at pages 2-3 of the specification. One of ordinary skill in the art armed with such knowledge would have been led to employ either the lowest carbon content taught by Nagarajan or slightly lower carbon content than the lowest carbon content taught by Nagarajan in the steel

sheath of its metal-core weld wire, motivated by a reasonable expectation of reducing fume generation.

The appellants also argue that Nagarajan does not teach or suggest the total carbon content in the metal-core weld wire as recited in claim 3 and the manganese content in the steel sheath of the metal-core weld wire as recited in claim 5. See, e.g., the Brief, pages 7-8. We do not agree.

As indicated by the examiner (Answer, page 6), Nagarajan discloses a metal-core weld wire having the total carbon content of 0.005-0.15%. See, e.g., column 4, lines 5-15. This metal-core weld wire has a steel sheath containing 0.1-1.1% of manganese (Mn). See, e.g., column 4, lines 30-36. The above total carbon and manganese contents overlap with those recited in claims 3 and 5. As the court in *Peterson*, 315 F.3d at 1329, 65 USPQ2d at 1382 stated:

In cases involving overlapping ranges, we and our predecessor court have consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. *E.g.*, *In re Woodruff*, 919 F.2d at 1578, 16 USPQ2d at 1936-37 (concluding that a claimed invention was rendered obvious by a prior art reference whose disclosed range ("about 1-5%" carbon monoxide) abutted the claimed range ("more than 5% to about 25%" carbon monoxide); *In re Malagari*, 499 F.2d at 1303, 182 USPQ at 553 (concluding that a claimed invention was rendered *prima facie* obvious by a prior art reference whose disclosed range (0.020-0.035% carbon) overlapped the claimed range (0.030-0.070% carbon)...

Under the above circumstances, we determine that the examiner has established a *prima facie* case of obviousness regarding the claimed subject matter. Thus, the burden of going forward shifts to the appellants. *In re Mayne*, 104 F.3d 1339, 1343, 41 USPQ2d

1451, 1455 (Fed. Cir. 1997); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

The appellants rely on the Rule 132 affidavit executed by Grant Harvey on February 26, 2002 and Exhibit A (HOBART Brothers brochure for "Eclipse ULTIMET 716" weld wire) to rebut the *prima facie* case established by the examiner. See the Brief, pages 5-7 and the Reply Brief, pages 7-11. According to the appellants (*Id.*), the affidavit and Exhibit A demonstrate that the claimed subject matter provides (1) commercial success and (2) long-felt needs and failure by others, either of which, if proven, is an indicia of nonobviousness.

To overcome the examiner's *prima facie* case of obviousness based on commercial success, the appellants must prove that the claimed invention is commercially successful and that its sales directly resulted from the merits of the claimed invention. *In re Huang*, 100 F.3d 135, 139-40, 40 USPQ2d 1685, 1689-90 (Fed. Cir. 1996). However, the appellants have not proffered any evidence to support the statement in the affidavit that the sales of "FabCOR80XLS and "Eclipse ULTIMET 716" "are growing substantially" and "have substantially displaced the use of flux-core weld wire by some customers of ITW Hobart Canada...". See the Brief, pages 6-7, the Reply Brief, pages 8-9 and the affidavit, paragraphs 8, 9 and 10. There is no evidence indicating the actual number of "FabCOR80XLS and "Eclipse ULTIMET 716" sold, much less their actual share in the weld wire market. See the affidavit and Exhibit A in their entirety.

The appellants also have not evinced that the so-called "growing sales" of "FabCOR80XLS and "Eclipse ULTIMET 716" necessarily correlate to the sales of the claimed metal-core weld wire. *Id.* We find no evidence to indicate that "FabCOR80XLS and "Eclipse ULTIMET 716" correspond to or are reasonably commensurate with the claimed subject matter. See *In re Kulling*, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990)("'[O]bjective evidence of nonobviousness must be commensurate in scope with the claims.'")(quoting *In re Linder*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). Exhibit A relied upon by the appellants shows only Eclipse ULTIMET 716 which is said to be a metal-core weld wire. See Exhibit A in its entirety. Eclipse ULTIMET 716 contains 0.026-0.029% carbon, 1.48-1.70 manganese (Mn), 0.75-0.83 silica (Si), 0.01% phosphorous (P) and 0.01 sulfur (S). *Id.* Silica, phosphorous and sulfur in Eclipse ULTIMET 716 are not required in the claimed metal-core weld wire. Compare Exhibit A with claims 1, 3, 5, 8 and 11. The percentage of carbon in Eclipse ULTIMET 716 is greater than the percentage of carbon recited in claim 3. Compare Exhibit A with claim 3. The locations of carbon and manganese in Eclipse ULTIMET 716 are not defined in the manner recited in the claims on appeal. Compare Exhibit A with Claims 1, 3, 5, 8 and 11. Thus, the appellants have not supplied sufficient evidence to prove that the claimed invention is commercially successful.

Further, the appellants have not provided sufficient evidence to prove that the so-called “growing sales” are a direct result of the unique characteristics (merits) of the claimed invention and not other economic and commercial factors unrelated to the merits of the claimed invention. See the Affidavit and Exhibit A in their entirety. Although the affidavit states that the “growing sales” of FabCOR80XLS and Eclipse ULTIMET 716 are due to their low fume characteristics, we find no evidence supporting this statement. The appellants have not shown that factors unrelated to the merits of the claimed invention, such as advertising and/or unclaimed components (e.g., phosphorus, sulfur and silica), are not responsible for “growing sales”. Moreover, the affidavit indicates that “growing sales” may have been due to government regulations. See the affidavit, paragraphs 9 and 10. Accordingly, we determine that the appellants have not carried their burden of proving commercial success.

As to the appellants’ argument based on a long-felt need and failure of others, the appellants must provide sufficient “tangible evidence to support a contention that [the claimed] invention actually has provided a long-awaited, widely-accepted, and promptly-adopted solution to the problem extant in the art, or that others had tried but failed to solve that problem.” *In re Mixon*, 470 F.2d 1374, 1377, 176 USPQ 296, 299 (CCPA 1973). However, the appellants have not supplied any tangible evidence to support the statement in the affidavit that the sales of “FabCOR80XLS and “Eclipse ULTIMET 716” “are growing substantially” and “have substantially displaced the use of flux-core weld wire by some



customers of ITW Hobart Canada..." See the affidavit and Exhibit 1 in their entirety. Also, the fact that "FabCOR80XLS" and "Eclipse ULTIMET 716" "have substantially displaced the use of flux-core weld wire by **some customers** of ITW Hobart Canada...(emphasis added)" does not indicate that "FabCOR80XLS" and "Eclipse ULTIMET 716" are widely accepted and promptly adopted.

Even if "FabCOR80XLS" and "Eclipse ULTIMET 716" are widely accepted and promptly adopted, their acceptance or adoption does not correlate to the acceptance or adoption of the claimed subject matter. For the reasons indicated *supra*, we find that "FabCOR80XLS" and "Eclipse ULTIMET 716" are not commensurate in scope with the claimed subject matter. See *In re Dill*, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979)("The evidence presented to rebut a *prima facie* case of obviousness must be commensurate in scope with the claims to which it pertains."); *Kulling*, 897 F.2d at 1149, 14 USPQ2d at 1058 (Fed. Cir. 1990)("'[O]bjective evidence of nonobviousness must be commensurate in scope with the claims.'")(quoting *In re Linder*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972).

The appellants have also failed to prove failure of others. In other words, the appellants have not supplied any "tangible evidence" to support their contention that others have failed to provide low fume weld wires. In fact, the appellants' own specification indicates (page 2) that:

In the field of flux-core weld wires, it is known generally to reduce fumes by reducing the carbon content in the steel sheath of the weld wire, as

discussed in U.S. Patent No. 5,580,475 issued 3 December 1996, entitled "Flux-Cored Wire for Gas Shield Arc Welding with Low Fume"....

It is also known in the field of flux-core weld wires to add carbon to the flux-core composition to compensate for any degradation in weld deposit mechanical properties otherwise associated with the reduction of the carbon content in the steel sheath.

Moreover, Nagarajan's low carbon metal-core weld wires are not said to suffer from the fume problem described in the affidavit and the specification.

Thus, based on the totality of record, including due consideration of the appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of 35 U.S.C. § 103. Hence, we affirm the examiner's decision rejecting all the appealed claims under 35 U.S.C. § 103.

AFFIRMED

THOMAS A. WALTZ  
Administrative Patent Judge

) BOARD OF PATENT  
) APPEALS  
) AND  
) INTERFERENCES

Appeal No. 2005-1378  
Application No. 09/227,242

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